USER'S MANUAL

TRAIL TECH

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Table of Contents:

Please read this user's manual completely before attempting to install or use Trail Tech Eclipse lighting products.

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A Note to You

Thanks for buying Trail Tech Eclipse Lighting:

Trail Tech brings functionality and life to your motor vehicle with high quality and innovation. To ensure you enjoy long and trouble-free operation, this User's Manual contains valuable information about how to operate and maintain your lights properly.

Please read this manual carefully.

Please record importand information:

Whenever you call to request service for Eclipse lights, you need to know the date of purchase, dealer's name, address, and telephone number.

PURCHASE DATE _____

DEALER NAME _____

DEALER ADDRESS _____

DEALER PHONE _____

Keep this book and sales slip together for future reference.

Precautions

WARNING:

When using Trail Tech Eclipse Lighting products, follow basic precautions, including the following:

• Do not touch lights during operation. The lights will become hot. They need a minimum 5-10 mph air flow for proper cooling. If the lights become too hot, they will shut off automatically.

• Do not wash lights with high pressure water. Water may enter the lamp.

• Avoid contact with gasoline, degreasers or other chemical cleaners as they may damage the lights.

• Respect the environment.

• **HIGH VOLTAGE!** Unplug lights from power circuit before any type of service or maintenance, including lamp replacement. Extremely high voltage shock danger.

• SCMR16 HID are only servicable by Trail Tech technicians.

• Do not use portable battery packs for Helmet Lights other than those made by Trail Tech. Use of third-party batteries may void warranty.

• Remember to pay attention to the trail while riding.

Lighting Options

1. MR11 HID Lights

Double vibration isolated MR11 HID lights. HID lights have a characteristic blue-white tinge that makes them very bright and clean. Excellent for extreme applications. 13 watts each.

MR11 lights are available in Black or Chrome for a variety of applications:

- Vibration isolated posts for mounting to Trail Tech bar clamps, frame mounts or stock location replacement mounts are included standard.
- Helmet mounted lights are attached with industrial strength hook-and-hook fasteners.

5600 K
500 Lumens

2. 8” HID Race Light

The 8” light is the Racer’s Choice.

Derived from the automotive industry, the 8” light uses an advanced reflector and lens to create an optimum beam pattern for high speed riding. 35 watts.

For optimum cornering, combine an 8” Race Light with Helmet Lights.

Night-time Speed = Day-time Speed

5600 K

5600 K
1,850 Lumens

3. SCMR16 HID Lights

SCMR16 provide top-quality lighting. Larger than MR11 and producing far more light, SCMR16. At 30 watts each, they are virtually plug and play, and their light output is intense. 3 times brighter than Halogen. When only the best will do, these are the lights for you.

SCMR16 feature self-contained ballasts. They are available for most applications including frame, bar and helmet mounting. All HID lights require DC power.

Trail Tech Eclipse MR11 HID Lights:

Trail Tech Eclipse MR11 HID lights are small and compact. Pulling only 13 watts of power each, most systems can run them with no modification. These lights are ideal for use as helmet lights. They also serve as great lights for smaller vehicles or backup lighting for those faster, meaner machines.

At 5,000K and 500 Lumens, MR11's put out a pleasing light, and with their self-contained ballasts, there is no extra "black box" to mount. MR11 is polarity dependent, so be sure to hook the positive(+) and negative(-) leads correctly or risk damaging the lamp ballast. MR11 requires DC power.

As helmet lights, the MR11 lights are a clear choice. They are light-weight and easy on the neck. They attach to any helmet with industrial-strength hook-and-hook fasteners. The lights recieve power via a bungee cable that can be routed to either a vehicle battery or a portable battery pack clipped to the rider. The bungee has an LED power meter, useful for estimating battery run-time. Because the lights are attached to the helmet, light is thrown wherever the rider looks. Never plunge into blackness again.

Don't want lights on your helmet? Mount them to the frame with clamps, solid mount into a drilled 3/4" hole, or use a Trail Tech vibration-isolated bar clamp for lighting.

Custom kits for intended application.

Mounting

1. Bar Clamp Mount

Mount to bike via Trail Tech model-specfic bar clamps. Screw the Trail Tech light wing on underneath the Trail Tech clamp for a polished all-chrome dash.

2. Frame Mount

For an easy, subtle lighting installation frame mounted lights are the way to go. Placed on the frame by the shocks, they can go on either horizontal or vertical bars depending on the kit.

3. Helmet Mount

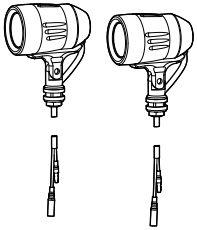
Put light where you want it. Attach HID lights to helmet using 3M high strength Dual-Lock velcro. Available in chrome or flat black finish.

It's dark at night, but wherever you look there will be plenty of light.

Parts List:

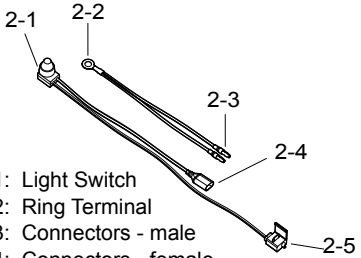
1. HID Light Assembly

NOTE: The leads coming off of the HID lights have a polarity requirement. The black wire must go to a negative lead or GROUND, the red wire goes to a positive lead (+12 volt DC).



2. Wiring Accessories

NOTE: These wiring accessories are included in all kits where lights are sold as a pair. Not included for lights sold individually, but can be purchased separately (P/N 040-WH-1). Individual light packages include bullet connectors and shrink tubing.



2-1: Light Switch
2-2: Ring Terminal
2-3: Connectors - male
2-4: Connectors - female
2-5: Waterproof In-line tap

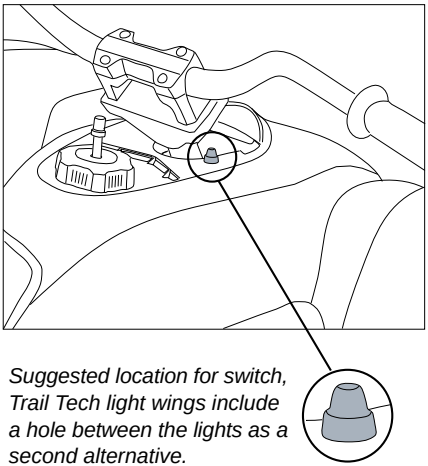
Technical Notes:

Because these lights have a low power draw (only 13 watts / light), they can wire into the stock wiring harness with the stock lights, allowing more than two lights at one time. HID lights can also supplement aftermarket halogen lights.

HID lights will only run on a DC electrical system (12 volts DC). It is possible to convert AC systems (e.g. Yamaha Banshee, Yamaha Blaster, Honda 250R, etc) to DC: this should be done by a qualified technician. Trail Tech makes a regulator/rectifier for DC conversions (P/N 7002-RR-150).

Handlebar or Frame Mount Wiring Guide:

1. Locate Power Wire:
Locate the power wire behind the vehicle's key switch.



Key Switch Wire Colors:

Yamaha Raptor:	Brown/White
Yamaha YFZ450:	Brown
Suzuki Z400:	Orange
Kawasaki KFX700:	Brown
DS650:	White
Honda 400EX:	Black/White
Polaris Predator:	Red/Black
Honda TRX450:	Black

Suggested location for switch, Trail Tech light wings include a hole between the lights as a second alternative.

2. Attach In-Line Tap:
Once the 12 volt power wire has been located, attach the in-line tap (2-5) to the wire. This tap will jumper into the power source. Make sure that the location for the HID light switch has been determined before attaching the in-line tap, so that the wires leading to the switch are long enough.

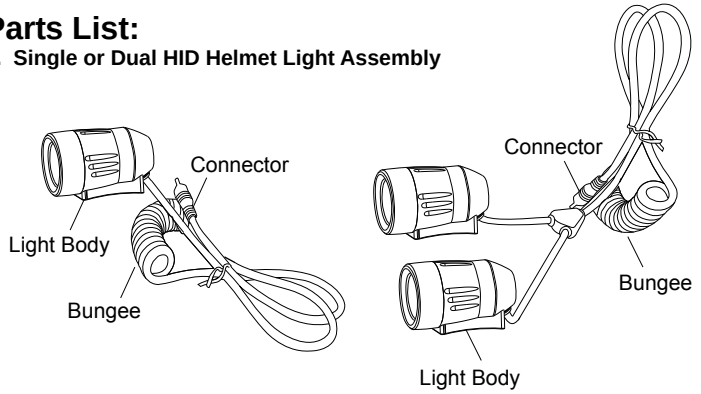
3. Connect Leads:
Take one positive lead (red wire) from each HID light and connect them into the female connectors coming from the light switch (2-4).

Take one negative lead (black wire) from each HID light and connect them to the male connectors (2-3) coming from the wires attached to the ring terminal. The ring terminal (2-2) should go to frame GROUND (under a bolt).

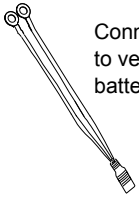
Helmet Mounted

Parts List:

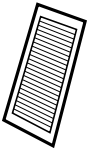
1. Single or Dual HID Helmet Light Assembly



2. Helmet Light Accessories



Connection to vehicle's battery



Strong Dual-Lock Hook-and-Hook Fasteners

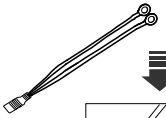
Switch Controller (integrated into bungee)

NOTE: Make connection between bunee assembly and battery connector or 12 volt lead by pushing the two connectors together and turning to secure.

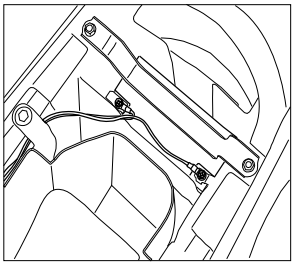
Helmet Mount for +12 Volt System Wiring Guide:

1. Connect to Battery

Your new lighting system is designed to run off a vehicle's +12 volt system.



Ring connectors attach to battery terminals



Attach the two ring connectors to the vehicle's battery. Remember that there is a polarity requirement: the red wire goes to the positive terminal, and the black wire goes to the negative terminal.

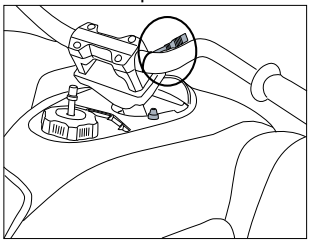
A 10 amp fuse can be installed in-line on the positive lead. Trail Tech does not provide this part.

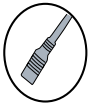
2. Position Connector in Good Spot for Riding

Place the connector in a convenient location for a seated or standing rider.

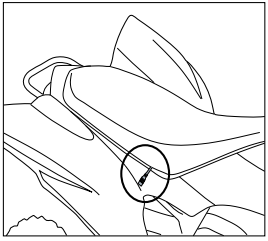
• One option is to run the cord under the seat and gas tank and to the handlebars. Some riders may choose to install their own separate switch so that the lights can be activated from the handlebar area.

• The second option is to extend the connector from the side of the seat.





Connector



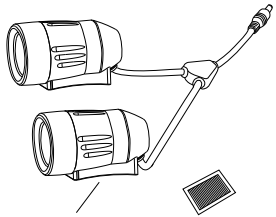
Light Attachment to Helmet:

1. Use Dual-Lock Strips to Mount to Helmet

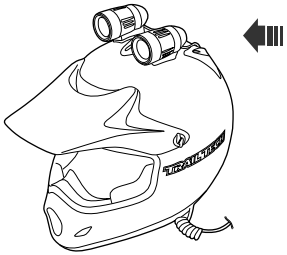
Before mounting, wear the helmet in a riding position and hold the lights to it for an idea of where to mount.

Use the illustrations to correctly position the lights on the helmet.

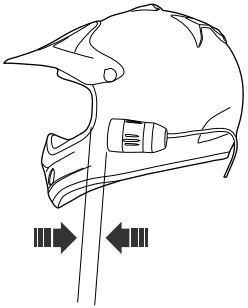
Once the Dual-Lock is on the helmet, wait 30 minutes before using the system. The adhesive will strengthen with time. Do not try to remove the light or pull on the Dual-Lock for 30 minutes, to provide curing time.



Dual-Lock Pre-installed Under Lights



A. Top Mounted Lights
Mounting on top of the helmet is recommended for greatest visibility.

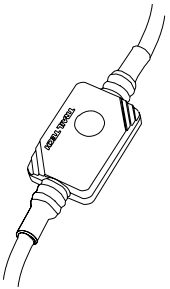


B. Side Mounted Lights
Align with back of goggle opening.

Reflection from dust particles is worse for side-mounted than top-mounted lights.

Helmet Light Controller Switch:

The switch on the helmet light bungee turns the lights on and off. Using LED's, it also gives voltage information.



The switch actively controls voltage levels to protect the lamps.
(DC 12V - 17V).

Use the soft touch button to turn the lights on and off. The lights have a 10 second warming phase, during which their color and intensity will vary.

Do not re-fire the lights immediately after they have turned off. Wait 10 seconds before turning back on.

Some air flow is required. Do not run in a stationary evironment (inside a building) for more than 5 minutes without a fan to remove heat. A 5-10 mph wind is sufficient.

Switch LED Lights:

The LED's in the switch controller report battery voltage levels.

Blue	Power On
Green	> 13 volts
Yellow	12 - 13 volts
Red	11 - 12 volts
Blinking Red	9 - 11 volts
Turns Off	< 9 volts

Eclipse 8” Race Light

8” Race Lights:

Trail Tech Eclipse 8” Diameter Race Lights for Motorcycles and ATV’s:

- Internally, 8” lights are constructed using high quality automotive styled components.
- The entire assembly is lightweight — less than 4 pounds for the motorcycles application and less than 5 pounds for the ATV’s.
- Compact, low profile parts reduce vibration related problems. Auto re-strike feature guarantees the racer won’t lose time if the machine stalls. Wiring harness designed for simple on/off attachment to any machine.
- Manufactured from high strength heat treated 7075 aluminum, the frames are built to hold up under the worst conditions.
- Two pivot points and one adjust point (all with vibration isolation features), give the rider flexibility to choose angle and light position on the fly.
- Two mounting options for motorcycles, and custom frames for ATV’s ensure the best fit, with no custom fabrication necessary.
- Only two wires to install, positive(+) and negative(-). 8” lights are polarity dependent and require 35 watts of DC power.

- Mounting is easy. Place against forks and use hose clamps to secure.

8” ECLIPSE HID

Eclipse SCMR16

SCMR16 HID:

- World's first self-contained MR16
- 30 watt draw, 100 watts Halogen equivalent output (200/watts pair)
- Night-time speeds = Daytime speeds
- Many quads do not require stator modifications. Most motorcycles do require stator modification.
- Model specific handlebar, frame and stock location mounting options
- Internal Ballast
- Double vibration isolated
- Thermally protected
- World class Trail Tech quality, service, support and warranty
- 5600 K color temperature
- 1,850 Lumens

- Similiar kits are available to use SCMR16 instead of MR11 lights.

Trail Tech Eclipse HID Lights Are:

- Ideal for extreme riding conditions
- Easy to Install
- Available in a variety of wattages
- CNC machined from solid 6061 billet aluminum
- Hand polished to a high gloss
- Clear coated for a long lasting bright finish
- Kits with two lights have 1 spot and 1 flood lamp
- HID lights have a characteristic blue tinge that makes them bright and clean.

ECLIPSE
High Intensity Discharge

Ni-MH Battery/Charger

These instructions cover the use of a Trail Tech Ni-MH battery only. Other battery options exist, but are not covered in this instruction, nor warrantied by Trail Tech.

Battery Operation and Storage Information:

- Charging and operating time may vary depending on ambient temperature.
- Use a Trail Tech Ni-MH Smart Charger to recharge a Trail Tech Ni-MH battery.
- Store Ni-MH batteries without recharging (allow to discharge).
- Ni-MH batteries may lose up to half their charge per month even when not being used, so recharge before each use.

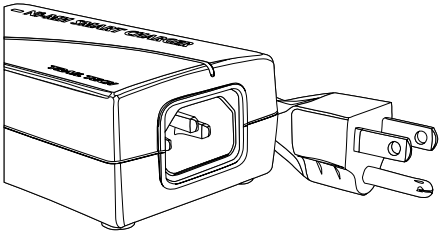
3700 mAh Ni-MH Battery:

- Trickle Charge: Battery recharges in 3 hours.
- Slow Charge: Battery recharges in 4 hours.

Run Times:

- One MR11HID » 13W » 4 hours
- Two MR11HID » 26W » 2 hours
- One MR16HID » 30W » 1.5 hours
- Two MR16HID » 60W » 0.8 hours

Actual run time will vary based on battery chemistry, age and condition.



Smart Charger Warning:

To prevent damage to charger or injury to yourself or to others, please read the following operation instructions before using this charger.

1. Charger is only to be used for charging Trail Tech NI-MH battery packs.
2. Charger is designed for indoor use only.
3. Charger will become very warm during use:
   - The charger should be horizontally positioned in a well ventilated area during use.
   - Do not cover charger or battery during use.
   - Do not use near inflammable or explosive goods.
4. Do not use near or around water.
5. Do not cover the charger while charging.
6. Ambient temperature should not be above 40°C (86°F).
7. Do not touch the plug.
8. Disconnect from AC power before connecting or disconnecting charger from battery pack.
10. Do not disassemble the charger.

Smart Charger Operation:

1. Connect battery pack to smart charger output connector first.
2. Switch smart charger to 0.7A for trickle charge or 1.4A for normal charge.
3. Connect smart charger to AC power source.

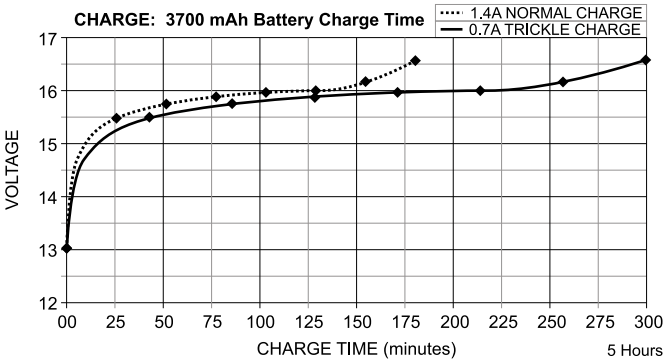
LED Colors:

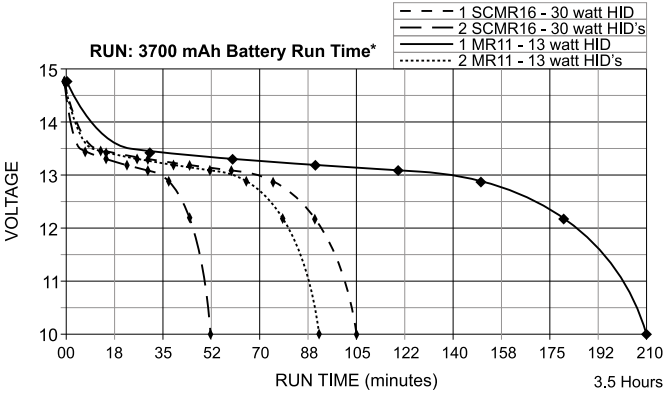
- Charger is plugged into AC power: RED and GREEN LED's blink twice
- Charger is connected and charging battery: Red LED will be on
- Charger is connected to a charged battery: Green LED will be on

4. After the battery pack is fully charged, disconnect from AC power source.
5. Finally, disconnect battery pack from smart charger output connector.

3700 mAh Ni-MH Specifications:

Actual times will vary based on individual battery chemistry, age and condition.



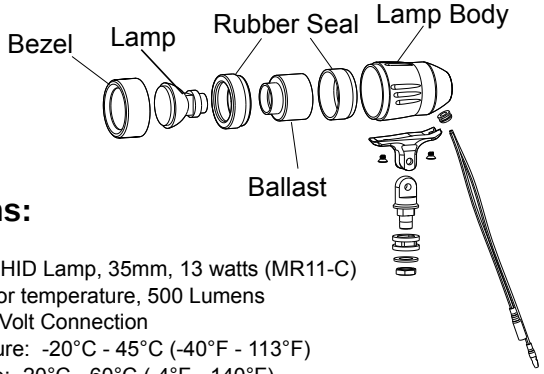


Lamp Replacement

Operation and Storage Information:

Purchase a replacement bulb from a Trail Tech authorized dealer only.

1. Remove the bezel by turning counter clockwise.
2. Remove the old bulb from the ballast.
3. Connect new bulb to the ballast securely.
4. Properly seat new bulb/ballast into light body.
5. Make sure new bulb is not turning when resetting the bezel.



Specifications:

MR11

Lamp: Metal Halide HID Lamp, 35mm, 13 watts (MR11-C)
5600K color temperature, 500 Lumens
Power Source: +12 Volt Connection
Operation Temperature: -20°C - 45°C (-40°F - 113°F)
Storage Temperature: -20°C - 60°C (-4°F - 140°F)

MR16

Lamp: Metal Halide HID Lamp, 50mm, 30 watts (MR16-C)
5600K color temperature, 1850 Lumens
Power Source: +12 Volt Connection
Operation Temperature: -20°C - 45°C (-40°F - 113°F)
Storage Temperature: -20°C - 60°C (-4°F - 140°F)

Potential Light Output

Each SCMR16 lamp draws 30 watts of DC power. An 8" Race Light draws 35 watts of DC power. An MR11 draws 13 watts of DC power. Some systems can handle this without modifications (Raptor, TRX450R, Z400, 400EX, KFX700, DRZ400.) Battery draw down may occur if you run these lights at the same time as the stock lights.

Some systems require stator modification to run HID lights as the stock systems do not provide enough DC power (YFZ450 and most offroad motorcycles.) The system must provide at least 60 watts of DC power for lighting for two SCMR16 lights.

Some systems may require both higher output stators, plus DC conversion to run these lights (Banshee, 250R.) Trail Tech recommends Banshee's and 250R's use 4 amp hour or greater lead-acid battery. Contact Trail Tech technical support or visit www.trailtech.net for more information.

WARNING: Light will get hot during operation. Do not touch the lamp or light housing during operation. These lights must always have some air flow on them when in operation. If vehicle is to be stopped for an extended period of time, turn the lights off. Failure to do so will result in a shortened life expectancy for the lamp.

Note: The leads coming off the MR11, SCMR16, and 8" Race Light lamps have a polarity requirement. The black wire must go to a negative lead or GROUND, the red wire goes to a positive lead (+12 Volt DC.)

DC Power:

If your quad does not have a battery (Banshee, 250R), Trail Tech can provide parts required to convert your electrical system to DC power. In most cases, floating the ground and adding a regulator/rectifier is required. Our regulator/rectifier can be used with either a battery or a capacitor for providing clean DC power for your HID lights.

Once converted to DC power your lights will no longer fade when RPM's are low. The lights will be just as bright at idle as they are at full RPM.

DC Conversions should be performed by a qualified technician.

Power Available by Model (Stock):

ATV's:	
Banshee	70 watts AC
Blaster	40 watts AC
250R	75 watts AC
Raptor	100 watts DC
Predator 500	100 watts DC
Z400/KFX/DVX400	75 watts DC
400EX	75 watts DC
DS650	150 watts DC
TRX450R	100 watts DC
YFZ450	60 watts AC
Cannondale	90 watts DC
Raptor 700	100 watts DC
Raptor 80	13 watts DC
Predator 90	26 watts DC

Motorcycles:	
KTM 2K2	40 watts AC
KTM 2K3A	40 watts AC
KTM 2K3B	55 watts AC
KTM 4K3B	26 watts AC
CRF250/450	0 watts
CRF250X/450X	20 watts DC
WR400	55 watts AC
WR250/450	26 watts DC
XR 250/400/600/650	55 watts AC
RM 2strokes	0 watts
KX250F, RMZ250	0 watts
TTR	13 watts DC
CRF150	13 watts DC
CRF230	13 watts DC

Notes

LIMITED WARRANTY

Within 90 days from the date of original purchase, Trail Tech will repair or replace, at its option, any Trail Tech Eclipse Light product which is deemed defective in workmanship or materials.

Please return the unit, together with proof of date of purchase, to your local dealer or send unit (postage paid) to Trail Tech.

Damage or injuries resulting from negligence or misuse are not covered by this warranty. Incidental or consequential damages are specifically excluded.* This warranty gives you specific legal rights. You may also have other rights which vary from state to state. **Because some states do not allow the exclusion of incidental or consequential damages, this exclusion may not apply to you.*

MADE IN AMERICA

TRAIL TECH

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www.trailtech.net
360-687-4530

RECYCLE